

Work Order ID 149948

Monday, August 15, 2016 1:59:59 PM

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Item ID: D6101-007 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle Billet

Start Date: 8/15/2016 Start Qty: 20.00 ***20*** Cust Item ID:
 Required Date: 8/29/2016 Req'd Qty: 20.00 ***20*** Customer:

Reference:

Approvals: Process Plan: **DAS 13 9-89** Date: **AUG 15 2016** Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								
100	PURCHASING	0.00				20	AUG 17 2016	DAS 13 9-89	
100									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 33353								
	a) Description: Alluminum billet								
	b) 7.750" x 8.250" x 2.50" thick								
	c) Tolerance on all dimensions are +0.030"/-0.000"								
	d) Grain direction along 7.750" length								
	e) Material: 7075-T7351 (QQ-A-250/12)								
	f) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.07							
Packaging	Ensure material certification is attached								

20x SP 16-9-7

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Ensure Material certification comply to Dwg D6101	0.00 0.00				20	0		DAS 14 9-89 16/09/08
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <u>MAT041</u> Memo LOCATION: MAT041	0.00 0.03				20	0		DAS 14 9-89 16/09/08
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.33							DAS 21 9-89 SEP 08 2016 DAS 21 9-89 SEP 08 2016

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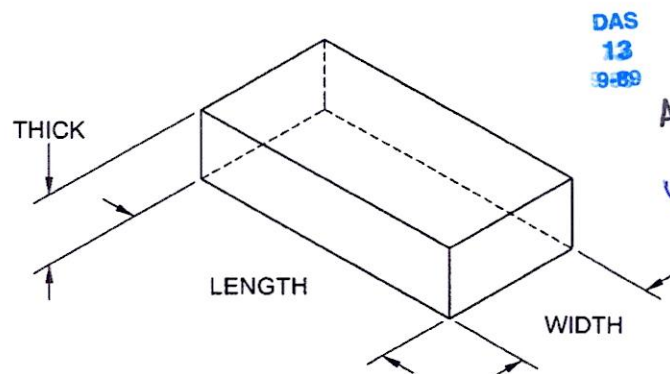
D6101-007

Required Date: 8/29/2016

Required Qty: 20.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007P		Purchased	No			110	Each	0.0000	1	20			
D6101-007P									**	20x 8p/6-9-7			
7075-T7351 8.25X7.75X2.5													

SPECIFICATION CONTROL DRAWING



DAS
13
9-89

AUG 15 2016

W/O: 149948

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO33353**

Purchase Order Date 8/17/2016

PO Print Date 8/17/2016

Page Number 2 of 3

Order From :

METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

Yours ppd

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

Destination-Collect

Line Total:

\$724.00

3

D6101-007P

7075-T7351
8.25X7.75X2.5

9/1/2016

Yes

9/1/2016

20.00

Each

\$56.11

\$1,122.20

AS PER DWG D6101 REV. B
B149948

MATERIAL: 7075-T7351 (QQ-A-250/12)
SIZE: 7.750" X 8.250" X 2.50" THICK
GRAIN DIRECTION ALONG: 7.750" LENGTH
TOLERANCE AS PER QUOTE +.030"/-.000"

Line Total:

\$1,122.20

4

D6102-013P

6061-T6 7.0X6.5X2.0

9/1/2016

Yes

9/1/2016

20.00

Each

\$31.65

\$633.00

AS PER DWG D6102 REV. D
B149949

SIZE: 7.000" X 6.500" X 2.00" THICK
GRAIN DIRECTION ALONG 6.500"
MATERIAL 6061-T6/T6511 QQ-A-250/11
TOLERANCE AS PER QUOTE +.030"/-.000"

Line Total:

\$633.00

Note:

8/17/2016

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3067298

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 02-SEP-16	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 3067298-2	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No 4465715	Line No 3	Item No 752241.MO	Description 2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 8.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12	
Purchase Order No 33353		Part Number YOUR ITEM NUMBER: D6101-007	Ordered Qty 20.00 PCS	Invoice Qty 20.00 PCS

Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS SP/69-7.					
Delivery No. 120521190	Mill KAISER ALUMINUM	Heat Number 	Mech Id	PCS 20	Width (IN)	Length (IN)	Shipped Qty(LBS) 330.6337

These commodities/technologies are subject to US Export Administration & US State Dept Regulations and, if intended for export, were/are exported thereunder Diversion contrary to US Law is Prohibited

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned.

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 02-SEP-2016 05:55:05 PM



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

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for credit.	
Reviewed by Authorized Castle Metals Representative	Date: Name:

Chris Glat

SEP 02 2016



SP16-9-7.

SHIP TO: A M CASTLE & CO 3050 SOUTH HYDRAULIC WICHITA, KS 67216
SOLD TO: AM CASTLE & CO- SOLD TO 1420 KENSINGTON RD SUITE 220 OAK BROOK, IL 60523

**KAISER
ALUMINUM**
Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4403443

CUSTOMER PO NUMBER: 344049	WORK PACKAGE:	CUSTOMER PART NUMBER: 752241	SHIP RUN/LOAD: 103437/9	GOVT CONTRACT NUMBER:		
KAISER ORDER NO: 1199092	LINE ITEM: 1	SHIP DATE: 6-JAN-2016	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: KaiserSelect Plate
WEIGHT SHIPPED: 5412 LB	QUANTITY: 3 PCS EST.	TRUCK B/L #: 2057936	GAUGE: 2.5000 IN (63.5000 MM)	DIAMETER/WIDTH: 48.500 IN (1231.9 MM)	LENGTH: 144.500 IN (3670.3 MM)	

MHU 1960912: LOT 159738B4: 1 pieces;
MHU 1960921: LOT 762747AD: 2 pieces;

Certified Specifications

DAS
14
9-89

AMS-STD-2154/RevA
BAC 5439/RevJ
CSTI 006/RevE
GSS16100/RevG/Amd1

AMS 4078/RevJ
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
MMS 159/RevT

AMS-QQ-A-250/12/RevA
ASTM B 594/Rev13
CMMP 025/RevU
GAMPS 9101/RevB/AmdSCN1
PS 21211/RevM

Test Code: 4297

Test Results

Lot: 159738B4 Cast 108 Drop 25 Ingot 5 Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	68.8 : 69.0 (474 : 476)	57.6 : 57.7 (397 : 398)	11.4 : 11.9

(ASTM E1004)
(EN 2004-1)
Conductivity %IACS : 40.1 Min 40.4 Max
(MS/M) : 23.3 Min 23.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.19	1.5	0.05	2.5	0.20	5.7	0.03	0.01	0.01	TOT 0.05



KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4403443

Lot: 782747A0 Cast 108 Drop 25 Ingot 5 Parent Lot: 159738B4 Melted in USA

(ASTM B8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	69.0 : 69.6 (476 : 480)	58.0 : 58.8 (400 : 405)	11.2 : 11.5

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	39.7 Min	40.4 Max
(MS/M) :	23.0 Min	23.4 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.19	1.5	0.05	2.5	0.20	5.7	0.03	0.01	0.01	TOT 0.05

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15413B R 6
AMS 4078,AMS QQ-A-250/12,AMS STD-2154,A
STM B209,ASTM B594,BS
S 7065,CMMP 026,CSTI 006,DPS 4.713,GAMP
S 9101,MMS 159,PS 212

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TEST NOTES

Metal represented by this test report was 100% Type I
(immersion) ultrasonically tested from one side with 3mm
dead zones top and bottom and meets the Class A and Class B
requirements of all specifications referenced on this test
report. No surface marking of sonic indications is
performed.





Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4403443

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser), is ISO-9001:2008/AS9100C certified and hereby certifies that all material shipped under this order:

- * has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements.
- * was melted in the United States of America or a qualifying country per DFARS 225.672-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
- * has been thermally processed in compliance with AMS 2772, where applicable.
- * is mercury free, within the limits of detection of ASTM E1291 (< 1 ppm).
- * is in compliance with RoHS 2, European Union Directive 2011/65/EU.
- * is in compliance with and regularly monitors any updates to the European Chemical Agency, ECHA, REACH regulations, (EC) n°1907/2006.
- * is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.

Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

JAMES HEMENWAY, LABORATORIES SUPERVISOR



MATERIAL RECEIPT INSPECTION FORM

PO - BATCH NO 33353/149948

MATERIAL D6101-007
 DATE 16/09/08
 MATERIAL CERT REQD 400
 QUANTITY RECHVD 20
 QUANTITY INSPE CTED 20
 QUANTITY RE CHVD 20

THICKNESS ORDERED 2.500
 THICKNESS RE CHVD 2.500
 SHEET SIZE ORDERED
 SHEET SIZE RE CHVD

DESCRIPTION	NCR	Check (Y/N)
SURFACE DAMAGE	Y	(N)
CORRECT FINISH	Y	(N)
CORROSION	Y	(N)
CORRECT GRAIN DIRECTION	Y	(N)
CORRECT MATERIAL	Y	(N)
CORRECT THICKNESS	Y	(N)
PHOTO REQUIRED	Y	(N)
CORRECT MATERIAL	Y	(N)
CORRECT REF # TO LINK CERT	Y	(N)
CORRECT MATERIAL IDENTIFICATION	Y	(N)
CORRECT MAT ON THE MATERIAL	Y	(N)
DON'T THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)
DON'T THIS REQUIRE AN EXTRUSION REPORT	Y	(N)

3035-T7351
 2.500
 HEAT # 782747A0
 D6101-007
 B/149948

COMMENTS

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CH CK	RECORD RESULTS BELOW	HRC	HRB	DUR A	DUR B

Tests located in the Quality Office

QC 18 INSPECTION

INSPECTED BY **DAS** 14 9-00
 DATE 16/09/08

SIGNED OFF BY _____
 DATE _____

ENGINEERING SIGNOFF (if required)

Attach this inspection sheet with the corresponding material cert and return to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

1. VERIFY STOCK TO DART PURCHASE ORDER
2. MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a. WIDTH THICKNESS DIAMETER WALL THICKNESS & LENGTH
3. VERIFY CONDITION OF MATERIAL i.e. DAMAGED CORRODED ETC
4. VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
5. VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
6. REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

1. VERIFY TO DART SUPPLIED DRAWING
 2. SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
 3. USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
 4. VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING
- AFTER MATERIAL PASSES INSPECTION**
5. HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN 20pcs FOR FULL INSPECTION
 6. INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

1. VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
2. INSPECT MIN HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
3. INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d. STRAIGHTNESS @ CENTER OVER 12' SPAN
 - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
4. IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1 TUBE2) AND W/O# AND PO#
5. RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER